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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,270	07/08/2003	Chuen-Ru Lee	9173-US-PA	1269

31561 7590 12/14/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

JONES, HUGH M

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,270

Applicant(s)

LEE ET AL.

Examiner

Hugh Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 of U. S. Application 10/604,270, filed 7/8/2003, are pending.

Specification

2. The substitute specification filed 10/13/2006 has been entered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **method** and **system** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. The drawings are also objected to under 37 CFR 1.83(a) because they fail to show the structural details, including the geometric relationships, of the liquid crystal device, as described in the specification. Any structural detail that is **essential for a proper understanding** of the disclosed invention should be shown in the drawing.

MPEP § 608.02(d).

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The issue is as follows. Due to the idiomatic and grammatical issues associated with the specification and claims, it is difficult to determine the unambiguous meaning of the claims. For example, the word "gap" is frequently used in the specification and claims. The accepted meaning of the word in the art pertains to the distance between the two pieces of glass encasing the LCD device. It appears that Applicants might be using the word to refer to the distance between "cells" instead of within cells. However, since there are no drawings showing structural details, it is impossible to unambiguously determine the device geometry and hence the meaning of the claims.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claim 1-20 are rejected under 35 U.S.C. 101 because the claimed invention**

is drawn to non-statutory subject matter since the claims do not produce a concrete, useful and tangible result.

9. Consider claim 1:

1. (currently amended) A method for designing a liquid crystal display device, implemented in a computing system, the method comprising the steps of:

~~[[based upon]]~~ measuring at least one viewing angle among a plurality of liquid crystal display films, and determining a range of a cell gap between liquid crystal adjacent cells of a liquid crystal display device;

~~[[based upon the]]~~ calculating a panel transmittance rate and a gamut of a plurality of liquid crystal modules, and determining at least one value of the range of the cell gap ~~between liquid crystal cells of the liquid crystal display device;~~

~~[[based upon]]~~ obtaining optic characteristics of a plurality of color filter films and color modules, and determining a set of optic characteristics for a color filter as well as for the liquid crystal display device; and

adjusting values related to the set of optic characteristics of the liquid crystal display device and the color filter, thereby producing a set of adjusted values for present as well as future design purposes.

10. There is no concrete, useful and tangible result. It appears to recite obtaining numbers for a later intended use. It is not clear what “measuring” encompasses. There is no claimed connection between the measuring and determining (limitation 1). The meaning of “range” is not specified by the claim. The relationship of the color film to the LCD cell is unknown. The last limitation recites “adjusting values”. It is unclear whether these are the same values, as referred to in limitation (the claim does not recite “said value”). It is not clear what the result is.

11. The above issues apply to all claims.

12. Analysis of claims 19-20 also indicates that the “system” or “system” is broad enough to include nonstatutory examples. The “data base” may also be mere software

and broad enough to be nonstatutory.

13. The first limitation of claim 17 recites:

17. (currently amended) A system for designing a liquid crystal module for designing a prototype of a product, the system includes means for performing a method comprising the following steps:
[[based upon]]according to at least one viewing angle among a plurality of liquid crystal display films, and determining a range of a gap between liquid crystal cells of a liquid crystal display device;

14. The meaning is not understood. It is not a properly claimed step. Thus, it is not possible to determine what concrete, useful and tangible result is being claimed.

15. *MPEP 2106 recites the following supporting rational for this reasoning:*

"Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."

16. *In this case, applicants have merely claimed an abstract algorithm or disembodied program steps that are not embodied on a computer-readable medium and specifically employed as a computer component to be executed on a processor and perform the claimed limitations. Thus, Applicants have attempted to claim nonfunctional descriptive material.*

17. An invention which is eligible for patenting under 35 U.S.C. 101 is in the useful arts when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. *The fundamental test for patent eligibility is thus to determine whether the claimed invention produces a “useful, concrete and tangible result.”* The test for practical application as applied by the examiner involves the determination of the following factors:

(1) Useful - The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

(a) the utility need not be expressly recited in the claims, rather it may be inferred.

(b) if the utility is not asserted in the written description, then it must be well established.

18. Furthermore, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(2) Tangible - Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. 101. In *Warmerdam* the abstract idea of a data structure

became capable of producing a useful result when it was fixed in a tangible medium which enabled its functionality to be realized.

(3) Concrete - Another consideration is whether the invention produces a concrete result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

19. A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. *Schrader*, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in i) below), or (B) be limited to a practical application within the technological arts (discussed in ii) below). See *Diamond v. Diehr*, 450 U.S. at 183-84, 209 USPQ at 6 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1877)) ("A [statutory] process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.... The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence."). See also *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *id.* at 1569, 31 USPQ2d at 1578-79 (Newman, J.,

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concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing O'Reilly v. Morse, 56 U.S. (15 How.) at 114-19). If a physical transformation occurs outside the computer, a disclosure that permits a skilled artisan to practice the claimed invention, i.e., to put it to a practical use, is sufficient. On the other hand, it is necessary for the claimed invention taken as a whole to produce a practical application if there is only a transformation of signals or data inside a computer or if a process merely manipulates concepts or converts one set of numbers into another.

20. The claims merely recite an algorithm or disembodied program steps. The claims are not tangible.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

21. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The meaning of "cell gap" cannot be determined from the specification. Furthermore, there are no figures pertaining to the claimed invention. It is impossible to determine the structural characteristics.

22. Applicants are thanked for their explanation on pages 10-13. However, respectfully, the meaning of cell gap is still not understood. On the one hand,

Applicant's argue about adjacent cells (page 9). Applicants also argue (page 9) that the term is standard in the art. On the other hand, the arguments in the middle of page 12 suggest that the cell gap may be intrinsic to a single cell. The latter definition is that as known in the art, as explained in the last office action.


23. Thus, the subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention with undo experimentation.

24. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

25. As explained in the last action, the issue is as follows. Due to the idiomatic and grammatical issues associated with the specification and claims, it is difficult to determine the unambiguous meaning of the claims. For example, the word "gap" is frequently used in the specification and claims. The accepted meaning of the word in the art pertains to the distance between the two pieces of glass encasing the LCD device. It appears that Applicants might be using the word to refer to the distance between "cells" instead of within cells. However, since there are **no drawings showing structural details**, it is impossible to unambiguously determine the device geometry and hence the meaning of the claims.



26. The use of transitional phrases in certain parts of the claim and lack of use of said phrases in other parts of the claims, as well as a lack of indentation of each limitation, makes it impossible to determine the meaning of the claims. Consider claim 11. There is no transitional phrase after “of a product” (the preamble); there are multiple uses of the word “and” (as in the two limitations before the last limitation).

27. Consider claim 1:

1. (currently amended) A method for designing a liquid crystal display device, implemented in a computing system, the method comprising the steps of:

~~[[based upon]]~~ measuring at least one viewing angle among a plurality of liquid crystal display films, and determining a range of a cell gap between liquid crystal adjacent cells of a liquid crystal display device;

~~[[based upon the]]~~ calculating a panel transmittance rate and a gamut of a plurality of liquid crystal modules, and determining at least one value of the range of the cell gap ~~between liquid crystal cells of the liquid crystal display device;~~

~~[[based upon]]~~ obtaining optic characteristics of a plurality of color filter films and color modules, and determining a set of optic characteristics for a color filter as well as for the liquid crystal display device; and

adjusting values related to the set of optic characteristics of the liquid crystal display device and the color filter, thereby producing a set of adjusted values for present as well as future design purposes.

28. The claim appears to recite obtaining numbers for a later intended use. It is not clear what “measuring” encompasses. There is no claimed connection between the measuring and determining (limitation 1).

29. The meaning of “range” is not specified by the claim. The relationship of the color film to the LCD cell is unknown. The last limitation recites “adjusting values”. It is unclear whether these are the same values, as referred to in limitation (the claim does not recite “said value”). It is not clear what the result is.

30. The above issues apply to all claims.

31. The first limitation of claim 17 recites:

17. (currently amended) A system for designing a liquid crystal module for designing a prototype of a product, the system includes means for performing a method comprising the following steps:

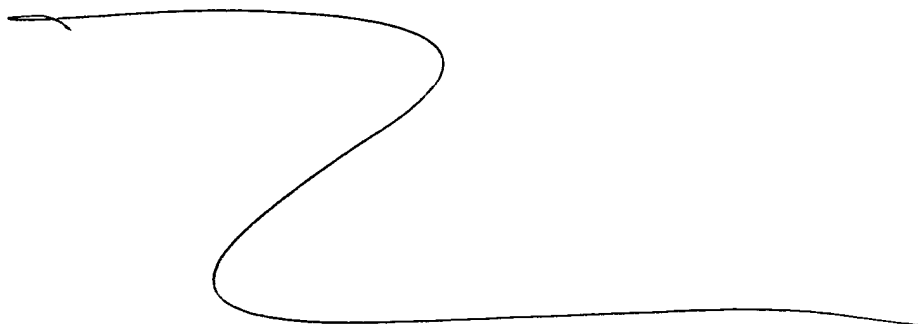
~~[[based upon]]~~ according to at least one viewing angle among a plurality of liquid crystal display films, and determining a range of a gap between liquid crystal cells of a liquid crystal display device;

32. The meaning is not understood. It is not a properly claimed step. Thus, it is not possible to determine what concrete, useful and tangible result is being claimed.

33. Applicant's arguments regarding the 101 rejections are not understood. The question as to whether the algorithm is abstract is not determinative of whether the claimed result is tangible.

34. Applicants have made no specific arguments with respect to the 112 rejections.

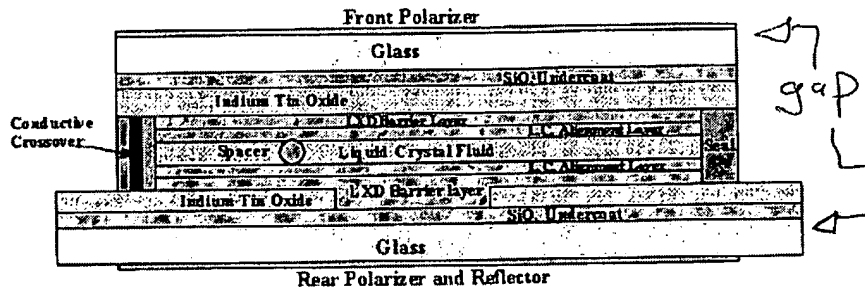
35. Applicants are thanked for their explanation on pages 10-13. However, respectfully, the meaning of cell gap is still not understood. On the one hand, Applicant's argue about adjacent cells (page 9). Applicants also argue (page 9) that the term is standard in the art. On the other hand, the arguments in the middle of page 12 suggest that the cell gap may be intrinsic to a single cell. The latter definition is that as known in the art, as explained in the last office action. See (of record):



What is a Liquid Crystal Display?

[Return to Technical Q & A](#)

[Next Question -
What is a Liquid Crystal Fluid?](#)



Cross-sectional view of a typical display.

Simply put, a liquid crystal display (LCD) is a parallel plate capacitor with a dielectric between the plates. However, it's not quite that simple. First we select glass coated with a transparent metal coating for the electrodes of the display. The glass is usually a soda lime type but in some instances it can be a more expensive borosilicate type. The transparent metal coating can be any thin layer of conductive material, such as gold, silver or tin. In order to keep the cost down and the have a reasonable process window with a highly transparent coating, the industry has been using indium-tin oxide (ITO) as the preferred electrode material.

Claim Interpretation

36. Recitations following words such as *suitable* are provided no patentable weight.

No Prior Art Rejection

37. Respectfully, the Examiner spent considerable time reviewing Applicant's arguments, the amended claims as well as the specification and conducted an extensive search of the art – and the meaning of the claims is still not understood. No prior art rejection is applied because it would require further considerable speculation regarding the meaning of the claims, for the reasons provided earlier.

38. As per the MPEP; see *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim

is indefinite, not obvious) and In re Steele, 305 F.2d 859, 134 USPQ 292 (CCPA 1962) (it is improper to rely on speculative assumptions regarding the meaning of a claim and then base a rejection under 35 U.S.C. 103 on these assumptions).

Allowable Matter

39. It appears that determining an optimal distance between pixels in order to obtain a particular viewing angle is novel and non-obvious over the prior art of record. However, this is based upon an educated guess as to Applicant's invention (Applicant's arguments re "adjacent cells"). It has not been claimed or persuasively shown to be present in Applicant's specification.

Response to Arguments

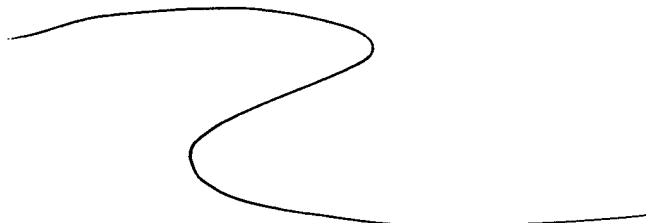
40. Applicant's arguments regarding the figures are not persuasive. Applicants argue:

Further, the cell gap is known by the prior art as the distance between adjacent pixel cells.

Even though the drawing does not show the cell gap, it can be known by the one in ordinary

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41. However, the Examiner conducted an extensive search and does not agree with Applicant's conclusion. Cell gap, in the prior art, refers to the geometry of an individual cell, and not the distance between cells. Applicants have provided no evidence in support of their conclusion.



42. Regardless, such argument is irrelevant to whether the claimed invention should be illustrated.

43. The drawings must show every feature of the invention specified in the claims.

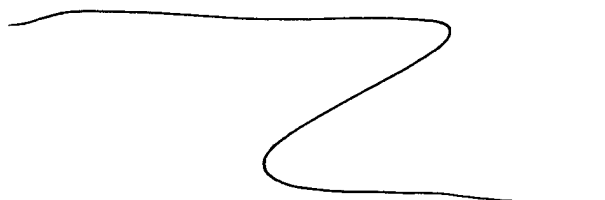
Therefore, the method and system must be shown or the feature(s) canceled from the claim(s).

44. The drawings also fail to show the structural details, including the geometric relationships, of the liquid crystal device, as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Conclusion

45. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

46. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

47. Any inquiry concerning this communication or earlier communications from the examiner should be:

directed to: Dr. Hugh Jones telephone number (571) 272-3781,

Monday-Thursday 0830 to 0700 ET,

or

the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

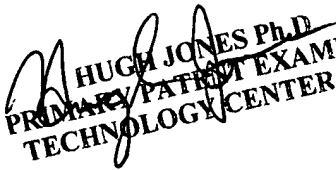
(703) 308-9051 (for formal communications intended for entry)

or (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

Dr. Hugh Jones

Primary Patent Examiner

December 7, 2006


HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100